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Anaphylaxis Due to Remdesivir

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In December 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first detected in Wuhan, China, and found to cause acute respiratory symptoms and pneumonia (1). To date, the disease caused by SARS-CoV-2, coronavirus disease 2019 (COVID-19), has resulted in >100 million known cases and >2 million deaths worldwide with limited effective pharmacological treatment options (2). Remdesivir, an antiviral prodrug whose metabolite acts as a nucleoside analog inhibiting viral RNA-dependent RNA polymerase (3), was approved by the Food and Drug Administration on 22 October 2020 for treatment of COVID-19 in adult and pediatric patients aged >12 years and weighing >40 kg (4). Although adverse events such as transaminitis and renal injury have been reported, the drug is thought to be relatively safe, and reports of severe infusion-related reactions are scarce (5). While anaphylaxis is listed as a possible adverse effect of the medication on the package insert (6), no references are given. Here, we present the first case, to our knowledge, of anaphylaxis due to remdesivir.

A 56-year-old female with glaucoma presented with cough and dyspnea after being found positive for SARS-CoV-2 via PCR testing 6 days prior. She initially required low-flow supplemental oxygen and was prescribed 200 mg of intravenous remdesivir on the first day of her hospital stay, followed by 100 mg infusions in 250 ml of 0.9% sodium chloride for the next 4 days, each to be given over 1 h. The first two infusions were well tolerated. However, 14 min after initiation of the second 100-mg infusion, she developed erythema of her face, neck, and upper chest; urticaria; perioral edema; and wheezing. The only other medications that she received earlier in the day were 200 mg of oral benzonatate an hour prior and 40 mg of delayed-release oral pantoprazole and 40 mg of subcutaneous enoxaparin 4 h prior, all of which she had received previously without adverse reaction. She emergently received 0.3 mg of intramuscular epinephrine and 125 mg of intravenous methylprednisolone and was intubated due to worsening hypoxia and apnea. In light of her constellation of signs and symptoms and their onset during remdesivir infusion, she was determined to have experienced an anaphylactic reaction to remdesivir. She did not receive further remdesivir infusions and was extubated ~24 h after intubation. Ultimately, she was discharged to home after an 8-day hospitalization with no need for further oxygen therapy.

This case of presumed anaphylaxis to remdesivir is important for clinicians to be aware of in the setting of the international pandemic of COVID-19, where limited treatment options are available. Currently, many believe the potential benefits of treatment with remdesivir outweigh the risks, as a paucity of severe adverse reactions have been reported. We hope this case can improve provider awareness of the possibility of anaphylaxis due to remdesivir.

We present a case of suspected anaphylaxis due to remdesivir in a patient with COVID-19. Providers treating such patients should be aware of the possibility of severe adverse reactions to this antiviral agent.

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